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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,345	07/29/2003	Joseph A. Zupanick	067083.0205	9309

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EXAMINER

KRECK, JOHN J

ART UNIT	PAPER NUMBER
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3673

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/630,345		ZUPANICK, JOSEPH A.	
	Examiner		Art Unit	
	John Kreck		3673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26,27,29,30,32-55 and 57-92 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26,27,29,30,32-55 and 57-92 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/21/06 has been entered.

Claims 26, 27, 29, 30, 32-55, 57-92 are pending.

2. The terminal disclaimer filed on 8/21/06 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent number 6,604,580 and U.S. Patent number 6,688,388 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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1. Claims 40, 42, 43, 44, 45, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (U.S. Patent number 5,435,400) in view of Stanley (U.S. Patent number 5,411,104) and the Underbalanced Drilling Manual (cited by applicant 1/11/05).

Smith teaches a method including drilling and pumping. Smith fails to explicitly teach the coal seam, but discloses that the method is useful to obtain gas.

Stanley teaches that coal seams are advantageously drilled to obtain gas. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the process in a coal seam as called for in claim 40, in order to obtain gas. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3.

Smith teaches the pumping through a second bore (second bore is 2, first bore is 34) as called for in claim 42.

Smith teaches that the second bore comprises a vertical bore as called for in claim 43.

Smith teaches the first bore is articulated as called for in claim 44.

Smith also teaches the main horizontal (e.g. 34) and plurality of laterals (e.g. 52, and 41) as called for in claim 45.

Smith also teaches the gas lift as called for in claim 49.

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2. Claims 40, 41, 46-48, 50, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller, et al. (U.S. Patent number 5,355,967) in view of Stanley and the Underbalanced Drilling Manual (cited by applicant 1/11/05).

Mueller teaches the drilling and pumping, but fails to teach the coal seam. Stanley teaches that coal seams are advantageously drilled to obtain gas. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the process in a coal seam as called for in claim 40, in order to obtain gas. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3.

Mueller teaches the pressure is reduced as called for in claim 41.

Mueller teaches a pressure of 100psi (col. 4, line 10) as called for in claim 46.

As noted above for claim 40, Stanley teaches the coal as called for in claim 47.

Mueller teaches the downhole pump (jet pump) as called for in claim 48.

Mueller teaches the absence of loss of fluids as called for in claim 50.

Regarding new claim 61: Mueller clearly teaches drilling mud.

3. Claims 40, 42, 43, 51, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen (U.S. Patent number 4,134,463) in view of Stanley and the Underbalanced Drilling Manual (cited by applicant 1/11/05).

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Allen teaches drilling and pumping, but fails to teach the coal seam. Stanley teaches that coal seams are advantageously drilled to obtain gas. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the process in a coal seam as called for in claim 40, in order to obtain gas. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3.

Allen teaches the pumping through a second bore as called for in claim 42.

Allen teaches that the second bore comprises a vertical bore (e.g. near 24) as called for in claim 43.

Allen teaches the junction as called for in claim 51.

Allen teaches the cavity as called for in claim 52. Note that the bore at the bottom of well 18 is a "cavity", even though it is not enlarged.

4. Claims 26, 27, 29, 30, 32-39, 53-55, 57, 58, 59, 60, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 79, 83, and 90-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Stanley and the Underbalanced Drilling Manual (cited by applicant 1/11/05).

Smith teaches pumping and reducing pressure by reducing weight of drilling fluid (the disclosed gas lift reduces the weight of the column dense drilling fluid, by admixing

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the fluid with much lighter gas). Smith does not teach a specific formation type for the drilling method and thus fails to explicitly teach the drilling in a coal seam, but teaches that the method is useful in a "formation 3 from which one or more minerals such as oil, natural gas...".

Stanley teaches that coal has natural gas.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the Smith method in a coal seam as called for in claim 26; in order to get coal gas. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3.

Smith teaches the lightening pressure as called for in claim 27.

Smith teaches reducing pressure by aerating the fluid(i.e. by gas lift) as called for in claim 29.

Smith teaches reducing pressure by circulating compressed air(i.e. by gas lift) as called for in claim 30.

Regarding claims 32 and 33: the exact pressure is deemed to be a design variable within the scope of normal drilling engineering procedures. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the Smith process with a pressure of nearly zero or 150-200 psi.

Smith teaches the below overbalanced conditions as called for in claim 33

Regarding claim 59: Smith clearly teaches drilling mud.

Regarding claim 75: Smith teaches the radiused portion.

Regarding independent claim 35:

Smith teaches drilling a well including a horizontal bore and reducing pressure by reducing weight of drilling fluid (the disclosed gas lift reduces the weight of the column dense drilling fluid, by admixing the fluid with much lighter gas). Smith does not teach a specific formation type for the drilling method and thus fails to explicitly teach the drilling in a coal seam, but teaches that the method is useful in a "formation 3 from which one or more minerals such as oil, natural gas...".

Stanley teaches that coal has natural gas.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the Smith method in a coal seam as called for in claim 35; in order to get coal gas. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3.

Smith teaches a pattern including a horizontal bore as called for in claim 36.

Smith also teaches reducing pressure as called for in claim 37.

Stanley also teaches that coal seams are porous and fractured as called for in claim 38.

Regarding claim 60: Smith clearly teaches drilling mud.

Regarding claim 79: Smith teaches the radiused portion.

Regarding independent claim 39: Smith teaches the method including drilling a well in a formation to produce a drainage pattern and producing gas. Smith does not teach a specific formation type for the drilling method and thus fails to explicitly teach the drilling in a coal seam, but teaches that the method is useful in a "formation from which one or more minerals such as oil, natural gas...".

Stanley teaches that coal has natural gas.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the Smith method in a coal seam as called for in claim 39; in order to get coal gas. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3.

Regarding independent claim 53:

Smith teaches drilling a horizontal bore and pumping fluid and cuttings. Smith does not teach a specific formation type for the drilling method and thus fails to

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explicitly teach the drilling in a coal seam, but teaches that the method is useful in a "formation 3 from which one or more minerals such as oil, natural gas...".

Stanley teaches that coal has natural gas.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the Smith method in a coal seam as called for in claim 53; in order to get coal gas. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3.

Smith teaches the hydrostatic pressure reduced as called for in claim 63.

Smith teaches the pumping through a second bore (second bore is 2, first bore is 34) as called for in claim 64.

Smith shows the second bore (2) is substantially vertical as called for in claim 65.

Smith shows the first bore (34) is articulated as called for in claim 66.

Smith teaches the drilling a plurality of lateral bores and pumping as called for in claim 67.

Regarding claim 68: Official Notice is taken of the fact that coal seams are known which have pressures in that range. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the Smith process in a coal seam with a pressure below 150psi as called for in claim 68.

Regarding claim 69: Official Notice is taken of the fact that gas-lift (as disclosed by Smith) and downhole pumps are known in the art to be useful for the same purpose.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Smith process to have used a downhole pump in place of gas-lift as called for in claim 69.

With regards to claim 70: Smith teaches the gas-lift.

Regarding claim 71: it is apparent that the Smith process would not plug a subterranean zone.

Smith teaches the junction (e.g. 26) as called for in claim 72.

Smith teaches the cavity (e.g. 26) as called for in claim 73.

Regarding independent claim 54:

Smith teaches drilling a horizontal bore and reducing weight. Smith does not teach a specific formation type for the drilling method and thus fails to explicitly teach the drilling in a coal seam, but teaches that the method is useful in a "formation 3 from which one or more minerals such as oil, natural gas...".

Stanley teaches that coal has natural gas.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the Smith method in a coal seam as called for in claim 54; in order to get coal gas. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3.

Smith teaches lightening by pumping as called for in claim 55.

Smith teaches lightening by gas lift as called for in claim 57.

Smith teaches pumping through a second bore (2) as called for in claim 58.

Regarding claim 62: Smith clearly teaches drilling mud.

Regarding claim 83: Smith teaches the radiused portion.

Regarding independent claim 90:

Smith teaches drilling a horizontal bore and lifting (using gas-lift). Smith fails to teach the coal seam and the lifting using a pump having an inlet downhole. Smith does not teach a specific formation type for the drilling method and thus fails to explicitly teach the drilling in a coal seam, but teaches that the method is useful in a "formation 3 from which one or more minerals such as oil, natural gas...".

Stanley teaches that coal has natural gas.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the Smith method in a coal seam. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3.

Official Notice is taken of the fact that gas-lift (as disclosed by Smith) and downhole pumps are known in the art to be useful for the same purpose. It would have been further obvious to one of ordinary skill in the art at the time of the invention to

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have modified the Smith process to have used a downhole pump as called for in claim 90 in place of gas-lift.

With regards to claims 91 and 92, one of ordinary skill in the art at the time of invention would have known that the location of a downhole drilling pump is largely a matter of engineering design. It would have been obvious to one of ordinary skill in the art at the time of the invention to have located the downhole pump inlet proximate the coal seam or in the coal seam as called for in claims 91 and 92.

5. Claims 74, 77, 78, 81, 82, 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Stanley and the Underbalanced Drilling Manual (cited by applicant 1/11/05) as applied to claims 26, 35, and 54 above, and further in view of Murray (U.S. Patent number 5,785,133). Smith lacks the plurality of laterals.

Murray teaches the drilling of a plurality of laterals. One of ordinary skill in the art would have recognized that the plurality of laterals improves hydrocarbon recovery.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Smith process to have included drilling the plurality of laterals as called for in claims 74, 78, and 82. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3.

Smith teaches the radiused portion as called for in claims 77, 81, and 85.

6. Claims 26, 76, 35, 80, 54, and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanley in view of Campbell (U.S. Patent number 3,534,822) and the Underbalanced Drilling Manual (cited by applicant 1/11/05).

Stanley teaches horizontal drilling underbalanced in a coal seam using air alone.

Campbell teaches underbalanced drilling including using a drilling fluid comprising a liquid foam to reduce downhole pressure by reducing weight of the drilling fluid, and that the foam is advantageous over air alone.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Stanley process to have included drilling using liquid and reducing downhole pressure as called for in claims 26, 35, and 54. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3.

Campbell teaches the foam as called for in claims 76, 80, and 84.

7. Claims 86-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanley in view of Murray (U.S. Patent number 5,785,133); Campbell (U.S. Patent number 3,534,822) and the Underbalanced Drilling Manual (cited by applicant 1/11/05).

Stanley teaches accessing a coal seam including drilling through a well bore having a radiused portion a horizontal bore, but fails to teach the drilling the plurality of

laterals and using foam (Stanley teaches air alone). Stanley teaches that underbalanced drilling is advantageous in coal.

Murray teaches the drilling of a plurality of laterals. One of ordinary skill in the art would have recognized that the plurality of laterals improves hydrocarbon recovery.

Campbell teaches underbalanced drilling including using a drilling fluid comprising foam, and that the foam is advantageous over air alone.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Stanley process to have included drilling the plurality of laterals and using foam as called for in claim 86. Although Stanley teaches that some coal seams may have problems when drilled with liquids, one of ordinary skill in the art would have known that underbalanced drilling would have eliminated or reduced those problems. See the Underbalanced Drilling Manual, e.g. chapters 1 and 3.

Stanley teaches the not-overbalanced conditions as called for in claim 87.

Stanley teaches producing gas and water as called for in claim 88.

Response to Arguments

8. Applicant's arguments filed 8/21/06 have been fully considered but they are not persuasive.

Applicant has argued that Stanley teaches away from using a liquid fluid when drilling in coal. This is not persuasive. One of ordinary skill in the art would have known that the problems identified in Stanley are all related to the drilling fluid entering the

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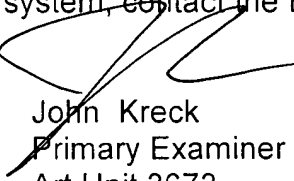
formation, which would have been eliminated by using underbalanced drilling.

Evidence to support this is found in "Underbalanced Drilling"

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kreck whose telephone number is 571-272-7042. The examiner can normally be reached on Mon-Thurs 530am-2pm; Fri: telework.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia Engle can be reached on 571-272-6660. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John Kreck
Primary Examiner
Art Unit 3673

20 September 2006